Claims:

Claims 1-34 Cancelled

35. (Previously Presented): An isolated polypeptide comprising a member selected from the group consisting of

(a) an amino acid sequence which has at least 90% identity to SEQ ID NO:2;

(b) an immunogenic fragment of the amino acid sequence of (a), wherein the immunogenic fragment is at least 90% identical to an aligned contiguous segment of SEQ ID NO:2; and

(c) an immunogenic fragment of the amino acid sequence of (a) that matches an aligned contiguous segment of SEQ ID NO:2 with no more than five single amino acid substitutions, deletions or additions,

wherein the isolated polypeptide, when administered to a subject in a suitable composition which can include an adjuvant or a suitable carrier coupled to the polypeptide, induces an immune response that recognizes a polypeptide having the sequence of SEQ ID NO:2.

36. (Previously Presented): The isolated polypeptide of Claim 35 wherein the amino acid sequence has at least 95% identity to SEQ ID NO:2 or the aligned contiguous segment of SEQ ID NO:2.

37. (Previously Presented): The isolated polypeptide of Claim 36 wherein the polypeptide consists of the amino acid sequence of SEQ ID NO:2.

38. (Previously Presented): A fusion protein comprising the isolated polypeptide of Claim 35.

39. (Previously Presented): The isolated polypeptide of Claim 35 wherein the polypeptide is the immunogenic fragment having no more than two single amino acid substitutions, deletions or additions relative to the aligned sequence.

40. (Previously Presented): The isolated polypeptide of Claim 35 wherein the polypeptide is the immunogenic fragment having no more than one single amino acid substitution, deletion or addition relative to the aligned sequence.

41. (Previously Presented): The isolated polypeptide of Claim 35 wherein the polypeptide is the immunogenic fragment which matches the aligned sequence.

42. (Previously Presented): An isolated polypeptide encoded by an isolated first polynucleotide wherein the isolated first polynucleotide hybridizes under stringent conditions to a second polynucleotide which encodes the polypeptide of SEQ ID NO:2; wherein stringent conditions comprise overnight incubation at 42° C. in a solution comprising: 50% formamide, 5×SSC (150 mM NaCl, 15 mM trisodium citrate), 50 mM sodium phosphate (pH7.6), 5× Denhardt's solution, 10% dextran sulfate, and 20 micrograms/ml denatured, sheared salmon sperm DNA, followed by washing the filters in 0.1× SSC at about 65° C; wherein the isolated polypeptide, when administered to a subject, induces an immune response that recognizes a polypeptide having the sequence of SEQ ID NO:2.

43. (Previously Presented): An isolated polynucleotide encoding an polypeptide of Claim 35.

44. (Previously Presented): An expression vector comprising the isolated polynucleotide of Claim 43.

45. (Previously Presented): A host cell transformed with the expression vector of Claim 44.

46. (Previously Presented): A process of producing an isolated polypeptide comprising (a) culturing the host cell of Claim 45 under conditions sufficient for the production of the encoded polypeptide and (b) recovering the polypeptide.

47. (Previously Presented): An immunogenic composition comprising the isolated polynucleotide of Claim 43 or an expression vector comprising the isolated polynucleotide, effective in a vaccinated mammal to express the polypeptide.

48. (Previously Presented): A live immunogenic composition comprising the isolated polynucleotide of Claim 43 or an expression vector comprising the isolated polynucleotide comprised within a microorganism effective itself or through its host to express the polypeptide.

49. (Previously Presented): An isolated polynucleotide segment comprising a polynucleotide sequence or the full complement of the entire length of the polynucleotide sequence, wherein the polynucleotide sequence is identical to SEQ ID NO:1 or3 minus any terminal stop codon, except that, over the entire length corresponding to SEQ ID NO:1 or 3 minus any terminal stop codon, $\mathbf{n_n}$ nucleotides are substituted, inserted or deleted, wherein $\mathbf{n_n}$ satisfies the following expression

$$\mathbf{n_n \leq x_n - (x_n \circ y)}$$

wherein $\mathbf{x_n}$ is the total number of nucleotides in SEQ ID NO:1 or 3 minus any terminal stop codon, **y** is at least 0.90, and wherein any non-integer product of $\mathbf{x_n}$ and **y** is rounded down to the nearest integer before subtracting the product from $\mathbf{x_n}$; and wherein the polynucleotide sequence detects a polynucleotide of SEQ ID NO:1 or 3 minus any terminal stop codon.

50. (Previously Presented): The isolated polynucleotide of Claim 49 where **y** is at least 0.95.

51. (Previously Presented): An expression vector comprising the isolated polynucleotide of Claim 49 which codes for a polypeptide that, when administered to a mammal, induces an immune response that recognizes a polypeptide having the sequence of SEQ ID NO:2.

52. (Previously Presented): A host cell transformed with the isolated polynucleotide or an expression vector comprising the isolated polynucleotide of Claim 49.

53. (Previously Presented): A process of producing an isolated polypeptide comprising (a) culturing the host cell of Claim 52 under conditions sufficient for the production of the encoded polypeptide and (b) recovering the polypeptide.

54. (Previously Presented): An immunogenic composition comprising the polypeptide of Claim 35.

55. (Previously Presented): The immunogenic composition of Claim 54 further comprising an adjuvant.

56. (Previously Presented): The immunogenic composition of Claim 55 wherein the adjuvant induces a TH1-type response.

57. (Previously Presented): The immunogenic composition of Claim 55 the adjuvant is a member selected from the group consisting of 3D-MPL, QS21, a mixture of QS21 and cholesterol, and a CpG oligonucleotide.

58. (Previously Presented): A method for inducing an immune response in a mammal comprising administration of the polypeptide of Claim 35.

59. (Previously Presented): A method for screening to identify compounds which stimulate or which inhibit the function of the polypeptide of Claim 35 which comprises a method selected from the group consisting of:

(a) measuring the binding of a candidate compound to the said polypeptide (or to the cells or membranes bearing the polypeptide) or a fusion protein thereof by means of a label directly or indirectly associated with the candidate compound;

(b) measuring the binding of a candidate compound to the polypeptide (or to the cells or membranes bearing the polypeptide) or a fusion protein thereof in the presence of a labeled competitor;

(c) testing whether the candidate compound results in a signal generated by activation or inhibition of the said polypeptide, using detection systems appropriate to the cells or cell membranes bearing the polypeptide;

(d) mixing a candidate compound with a solution containing the polypeptide of Claim 34, to form a mixture, measuring activity of the polypeptide in the mixture, and comparing the activity of the mixture to a standard; or

(e) detecting the effect of a candidate compound on the production of mRNA encoding said polypeptide and said polypeptide in cells.

60. (Previously Presented): A method for the treatment of a subject by immunoprophylaxis or therapy comprising *in vitro* induction of immune responses to a polypeptide of Claim 35, using *in vitro* incubation of the polypeptide with cells from the immune system of a mammal, and reinfusing these activated immune cells to the mammal for the treatment of disease.

61. (Previously Presented): A method as claimed in Claim 60 wherein the treatment is for ovarian or colon cancer.

62. (Previously Presented): A process for diagnosing a disease or a susceptibility to a disease in a subject related to expression or activity of the polypeptide of Claim 35 in a subject comprising: analyzing for the presence or amount of said polypeptide expression in a sample derived from said subject.

63. (Previously Presented): The process of claim 62, wherein the disease is colon cancer.

Claims:

Pursuant to the Office Action and 37 CFR 1.126, Applicants have renumbered the claims as 35-63.

Restriction / Distinct Inventions:

Claims 35-63 were pending, and subject to a six (6) way Restriction Requirement.

Applicants hereby elect to prosecute Group I (claims 35-42 and 54-57) drawn to an immunogenic fragment of SEQ ID NO:2 and SEQ ID NO:2.

Closing Remarks

Applicants thank the Examiner for the Office Action and believe this response to be a full and complete response to such Office Action.

FEE DEFICIENCY

☒ If an extension of time is deemed required for consideration of this paper, please consider this paper to comprise a petition for such an extension of time; The Commissioner is hereby authorized to charge the fee for any such extension to Deposit Account No. 50-0258.

and/or

☒ If any additional fee is required for consideration of this paper, please charge Account No. 50-0258.

Respectfully submitted,

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